

BUCHANAN'S Journal of Man

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
Vol. II.

BOSTON, JULY, 1888.

No. 6.

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 The new **SANITARIUM** or Health Palace of Dr. R. C. Flower, on Columbus Avenue, is now being prepared for use, and will probably be ready for the public in July. An expenditure of about \$175,000 in its remodelling and equipment (the building having cost \$200,000) will make it the most complete and admirable institution of the kind in America. It is a stone front, five story building, occupying 110 feet on Columbus Avenue at the corner of Holyoke St.

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The suspension of pain, under dangerous surgical operations, is the great triumph of Therapeutic Science in the present century. It came first by mesmeric hypnotism, which was applicable only to a few, and was restricted by the jealous hostility of the old medical profession. Then came the nitrous oxide, introduced by Dr. Wells, of Hartford, and promptly discountenanced by the enlightened (?) medical profession of Boston, and set aside for the next candidate, ether, discovered in the United States also, but far inferior to the nitrous oxide as a safe and pleasant agent. This was largely superseded by chloroform, discovered much earlier by Liebig and others, but introduced as an anæsthetic in 1847, by Professor Simpson. This proved to be the most powerful and dangerous of all. Thus the whole policy of the medical profession was to discourage the safe, and encourage the more dangerous agents. The magnetic sleep, the most perfect of all anæsthetic agents, was expelled from the realm of college authority; ether was substituted for nitrous oxide, and chloroform preferred to ether, until frequent deaths gave warning.

Nitrous oxide, much the safest of the three, has not been the favorite, but has held its ground, especially with dentists. But even nitrous oxide is not perfect. It is not equal to the magnetic sleep, when the latter is practicable, but fortunately it is applicable to all. To perfect the nitrous oxide, making it universally safe and pleasant, Dr. U. K. Mayo, of Boston, has combined it with certain harmless vegetable nervines, which appear to control the fatal tendency which belongs to all anæsthetics when carried too far. The success of Dr. Mayo, in perfecting our best anæsthetic, is amply attested by those who have used it. Dr. Thorndike, than whom Boston had no better surgeon, pronounced it "the safest the world has yet seen." It has been administered to children and to patients in extreme debility. Drs. Frizzell and Williams say they have given it "repeatedly in heart disease, severe lung diseases, Bright's disease, etc., where the patients were so feeble as to require assistance in walking, many of them under medical treatment, and the results have been all that we could ask—no

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irritation, suffocation, nor depression. We heartily commend it to all as the anæsthetic of the age." Dr. Morrill, of Boston, administered Mayo's anæsthetic to his wife with delightful results when "her lungs were so badly disorganized, that the administration of ether or gas would be entirely unsafe." The reputation of this anæsthetic is now well established; in fact, it is not only safe and harmless, but has great medical virtue for daily use in many diseases, and is coming into use for such purposes. In a paper before the Georgia State Dental Society, Dr. E. Parsons testified strongly to its superiority. "The nitrous oxide (says Dr. P.) causes the patient when fully under its influence to have very like the appearance of a corpse," but under this new anæsthetic "the patient appears like one in a natural sleep." The language of the press generally has been highly commendatory, and if Dr. Mayo had occupied so conspicuous a rank as Prof. Simpson, of Edinburgh, his new anæsthetic would have been adopted at once in every college of America and Europe.

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BUCHANAN'S JOURNAL OF MAN.

VOL. II.

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The Warlike Commerce of Religion and Science.

The exterior senses see, feel and weigh ponderable matter and its actions. They recognize only matter and force. This is the intellectuality which belongs to average humanity, engaged in its daily toils and struggles. Deeper it does not see, and by long habit it becomes fixed in this mental condition and deeper it *will not* see.

The interior senses perceive the subtler energies and the life which are not material. To them the infinite worlds of life are all open, and the mysterious operations of life in matter.

It is the aim of THE JOURNAL OF MAN to develop and cultivate in mankind the faculties of interior perception, by means of which we understand life in matter and the infinite range of life and power which does not appear in matter. The spiritual side of humanity is a higher portion of the human constitution, and therefore must be later in attaining its full development. At present it is rudimentary, unorganized, chaotic. Its vague and dreamy action is seen in Oriental speculation and in the slow evolution of religion.

From the material side of humanity, endowed with external senses, comes the doctrine of matter and force as all in all, and modern physical scientists declare that the potentiality of all things is found in matter, while the spiritual intuitions of the race have ever declared that there is something widely different from matter—indeed, the very antipodes of the material—something which we know and realize in our own minds which we know are not material, which are but an atom of the infinite life and power—the over-soul of the universe.

The ultra materialist, in his blindness, seeks to explain all things by material forces, as the ultra spiritualist seeks to explain all things without them by the direct will and power of God. The two one-eyed systems are equally fallacious. The materialist is frequently compelled by his theory to deny fiercely the spiritual facts which have been witnessed by millions, and the most transcendental spiritualists of the Berkleyan and Platonic school, are impelled to deny what everybody knows—the existence of matter, and to affirm that Spirit or God is the only reality—matter being unreal or only apparent—thus denying their own real belief, on which they act like the rest of the world every moment of their lives.

The science which is developed from material conceptions and the theology which is developed from its spiritual basis are necessarily in conflict, and both have been advancing from their infancy in continual strife, like a pair of quarrelsome brothers not yet old enough to behave themselves with propriety.

At first theology domineered over its younger brother, physical science, and stunted its growth; but every year has added to the robust power of science, until it has been able to battle with theology on equal terms and drive it back from its encroachments. The timid and helpless science of five and six centuries ago, cowering before the priest and scarcely daring to open its mouth in terror of the Inquisition, is now on equal terms, and gives back blow for blow with staggering effect. Theology staggers from the conflict, retreats from its old territory, which science has conquered, and seeks to find some resting spot where the terrible blows of science will not disturb it.

The flat square earth of theology has long since been abandoned and the round globe admitted — the spangles hung in the sky have been given up to astronomy as worlds of infinite grandeur — the deluge of Noah has lost all its essential features — the Garden of Eden and all that Genesis relates are beginning to be realized as a poem, an allegory, or a fable. The mythical hell is fading out of view, and every other irrational dogma is losing its hold, not only on the great mass of the people, but on the church and its leading clergy. There are, of course, a mighty mob still sitting in darkness. Ignorant audiences and bigoted, poorly-educated clergy who read but little of the foremost literature, are not aware that the great leaders of religious thought have given up the dogmas which they are still inflicting on the ignorant. The light penetrates the darkness slowly at day-break, but day is breaking on the church and everywhere some glimmering of the light is perceptible.

In a recent address or sermon delivered in the Church of the Unity, Boston (Rev. M. J. Savage, pastor), Mrs. L. Ormiston Chant of London explained the growth of religious thought in England: "There are seven fundamental doctrines upon which formerly, she might say twenty years ago, the whole force of Christianity was supposed to rest. Those seven doctrines have one by one given way to-day in the minds of the most religious people and the most religious teachers in our midst. It had been a weary, slow process, but it had been a sure one, and she could not help thinking that exactly the process that takes place in the individual is what has taken place in this great bulk of individuals. Mrs. Chant pointed out what these doctrines were, giving that of verbal inspiration of the Bible, which was succeeded by that of total depravity. Then came the doctrine of hereditary sin. With these three doctrines, she said, must inevitably go the doctrine of everlasting punishment, and it was wonderful and comforting to think how very seldom now she heard that doctrine quoted. The doctrine had to go. Then there was another doctrine, that of vicarious atonement, which was a very sad doctrine to carry into home life. Was it not time it should go, and then with it what would not go for a very long time yet, the doctrine of the deity of Christ? The last doctrine was the doctrine of the Trinity as such. If we would realize God to the fullest, as far as our human capacity could grasp the infinite, it must be as one God, as Christ spoke of him to the woman of Samaria. We needed, she said, to let our creed, our faith that made us strong, speak through our conduct if we would

help our brothers and sisters to believe in the justice and broad love of God. She urged that the fundamental doctrine of Christianity was the truth that Christ taught, the love of humanity, because God was our Father and we were his children, and said that the message that she brought was, Open your eyes and look up to the light."

Dean Stanley and Canon Farrar have been leaders in this purification of Christianity. A volume of sermons just published by Canon Farrar discourages the thought of relying on death-bed repentance and says of the Bible as quoted by the *Transcript*: "'It is not one book, but sixty-six books, of which some are separated from others by a space of fifteen hundred years. It is not one homogeneous utterance, but a series of fragmentary and manifold utterances, by writers of very different degrees of goodness and enlightenment.' 'I place the Bible,' he adds, 'first, because it must ever continue to be of the supremest importance to the race of man. The Bible is not by any means His only revelation, but it contains the words spoken by Him who was the Word of Life.'

"After accepting all that modern biblical exegesis can offer in the way of criticism, Farrar bases his belief in the Bible on its intrinsic merit and in its power to bring healing and comfort to the sorrowing hearts of humanity. 'Treat the Bible as a heap of missiles to be hurled at your neighbor and his opinions, and there will be no end to your follies and errors, but read it in humility and love, and then no Urim the high priest wore has ever gleamed with such lessons as it will reveal to you.'

"A series of papers which appeared in the *Homiletic Review* has been republished, on the subject of 'Evolution in Relation to Religion.' The writers do not all occupy an absolutely identical standpoint, but all hold the conviction 'that acceptance of the ascertained facts of evolution is not incompatible with a genuine, intelligent Christian faith.' These essays are representative of the earnest, conscientious thought of Christian thinkers and preachers. They are published because the writers hope they may be found helpful to those whose spirits are 'shadowed by the scepticisms of the age.'

"The sermons of divines in the Broad Church school, and of the progressive orthodox ministers are far in advance of any sermons preached in any pulpits a quarter of a century ago. Evolution is coming to be held as an accepted fact by most modern theologians. The Bible is being studied like any other book; and a study of comparative religions has led all honest thinkers to see that God reveals himself to his children in all sorts of different ways."

It is very true that evolution is being quietly accepted by religious leaders; but what does that mean? It means that Genesis is being very silently dropped. It is buried without even a funeral or a public recognition of its death. An English theologian, writing with great ability and skill in the *Guardian*, shows that we must accept evolution, because it is true and is not fatal to all religions, for Darwin himself, unlike other evolutionists, considered evolution compatible with the idea of a deity, and the theologian is satisfied if allowed to retain his theism. But what of Genesis? Of that he says not a

word; he does not attempt to defend it. This shows the coming change. Genesis will be buried in silence.

But the agnostics will not allow the funeral to proceed in silence. The ablest New York daily, the *Sun*, says that evolution "strikes at the very foundation of all theology, Christian or other, and shatters the corner-stone of revealed religion. According to the teachings of Christianity, of Mohammedanism, and the myths of all ancient mythologies, man's primitive state was high and holy and happy, and he descended from it because of sin and disobedience. According to evolution, man began at the bottom, having gradually come up from a simple cell, and has grown into what he is by a slow process of development.

"The two theories, therefore, are in direct conflict, whether we interpret the scriptural story literally, as many theologians do, or as an allegory, after the manner of others, or whether we take one or the other of the conflicting accounts of the Book of Genesis.

"In the first chapter of Genesis, it will be remembered, God is described as having made man as the last act of creation, giving him dominion over the animals already created; but in the second chapter the creation of Adam precedes that of the lower animals, which he is permitted to name, and which are created for his benefit. By the first account Adam and Eve were created together: "Male and female created he them;" but the second makes Adam to have been created first, then the various beasts, and last of all the woman.

"These differences are, of course, puzzling, but with respect to the paradisaical state of the first pair the two accounts do not disagree; and even if we take the whole as allegorical and mythical, in a sense which justifies the theory of revelation, the description is of mankind as having begun at the summit of development, and as having fallen from that state. To this evolution opposes the theory that man began at the bottom, and has been struggling painfully to get up higher ever since.

"If, then, we follow evolutionary science, we must reject revelation, and with it the whole system of theology: the fall of man, the origin of evil, the scheme of redemption, even the immortality of the human soul."

What a tremendous change in a hundred years from the time when the revolutionary patriot, Thomas Paine, called down upon his head terrible malignity and slander by writing the "Age of Reason," to the present time, when a leading newspaper goes so far beyond Paine, and is sustained by a hundred thousand readers without one word of denunciation from the clergy.

Of course, the dogmatic clergy take the same view as the *Sun*, and when Dr. Woodrow's case was before the late Presbyterian General Assembly, at Baltimore, May 28, he having been removed from his professorship for teaching evolution, Rev. Dr. Wm. Adams said: "If there is anything in my life for which I would be willing to sacrifice everything for the truth of God, it would be in resisting such a doctrine as this."

Dr. Woodrow maintained that we must believe God employs the

ordinary natural method until it has been proved that he employed the miraculous method—a very good idea; and, after showing that the Church had often been mistaken in drawing science from the Bible, continued: “I implore you not to add another instance to this sad list. Shall we learn nothing from the dark past? Can we not see by rightly looking at the Scriptures that they wholly shut out such questions? Why, then, shall we continue to understand them to make declarations respecting matters concerning which they are invariably silent? The scientific mistakes are in themselves of little moment; but consider that every such mistake made by the Church is an additional barrier, often insurmountable, in the acceptance of the gospel of salvation through Christ Jesus, which you have been commissioned to preach to every creature.”

The General Assembly decided against his appeal by a very large majority, considering his doctrine dangerous; but several of the members spoke out vigorously in favor of evolution. Rev. Dr. Lindsay came out squarely for evolution, and received much applause. Evidently the Presbyterian Assembly will surrender to evolution in time, after the first scare has subsided.

Prof. Jos. Le Conte's new work, “Evolution and its Relation to Religious Thought,” published by D. Appleton & Co., New York, is designed to harmonize evolution and religion, and will make the process easy for theologians. But there is another terror brought forth by agnostics—the idea that there is no design in creation, and therefore no designer—that the “survival of the fittest” and the interaction of forces have produced all the adaptations that seem to have come from design. This idea almost upset Darwin, and it is a real cause of alarm to theologians, for such a thought is fatal to theism.

The agnostics are pursuing the war effectively—they would capture all the strongholds of theology, and bury theology itself in a dishonored grave. The *Westminster Review* says:

“Intelligent men cannot accept as true the current forms of theology, nor yet can honest men, day after day, *act* the falsehood of apparently countenancing opinions, which, in their hearts, they know to be false. Those who are thus left as the exponents of the popular faith are *those so intellectually dull that they cannot master* the logical effect of recent criticism, and are unable to realize the spirit of the age in which they live; or they are those *whose moral susceptibilities are so blunt* that they perceive no moral incongruity in the advocacy of opinions they do not hold in the ordinary and conventional sense. But a class which is intellectually dull or morally blunt, cannot long retain ascendancy over the public mind: and that process of deterioration of character and influence of the clergy . . . seems likely to result in the *total extinction of respect for the office and services of the class.*”

And the Catholic Bishop McQuaid exults in the decay of Protestant theology, saying that it “has been discharging cargo ever since to escape shipwreck. Now that there is little left to throw overboard, above all wrangling and contention the cry of distress is heard, that

danger is imminent and destruction inevitable. In all its multitudinous forms Protestantism is decaying, is dying."

Nevertheless, all wisdom has not been gathered in by agnostics and Catholics. They will both be disappointed, for the future life is too well demonstrated, and the statistics of church membership, contributions and missions do not indicate decay and death, although the church literature may indicate the progressive enlightenment which will *prevent its death* by releasing it from fatal incumbrances.

The old theology, as a divine science, must die as the old alchemy died; but the truths which each endeavored to comprehend will be better and better comprehended as the years pass on. The vital and everlasting root of theology is RELIGION, which cannot die, because it is a part of the constitution of man. Its first crude leaflets, which appear as superstition, must fall and decay before its stem can rise and become the tree that shall shelter the nations.

The old theology was blind at first—it is purblind still. In the Old Testament, which hangs like a corpse around the modern Church, there was no immortality. Death was the lot of all mankind, *because Adam ate an apple!* and the Bible nowhere pronounces man immortal, but often speaks of his dying as an animal or plant, coming to his final end. But to escape this doom, Christ came and gave immortality to those who believed in him and illustrated it by his own resurrection. Hence, we say the present theology is purblind, for it does not see that immortality is an ever present fact,—that the so-called dead are ever with us, more alive than ever; but relies upon an obscure and doubtful record of something that was done in Palestine, thus placing the evidence so far beyond the pale of certainty that the great mass of the Church has no realizing sense of the future life, and enjoys little or none of the elevating, consoling and inspiring power of that great truth. As the old theology dies, this faint glimmering faith gives place to knowledge, and as theology dies, its enemy, agnosticism, must die with it, for both disappear when the grander truth to which we are led by psychometry shows that physical science reaches up to a higher realm and merges in that psychic science which fills the immensities of eternity.

In the present disorderly transition from the old theology to the divine wisdom of the coming centuries, there may be confusion and loss of faith and impairment of morals, but the continual influx from the higher world will restore the love and heroism that were blindly realized in Pentecostal days. The time may be far off, but every zealous thinker, speaker and doer of the truth helps on its advent. Will not you, dear reader, do something to help its approach, and co-operate with all who are laboring truly for human elevation?

NEW USES FOR ELECTRICITY.—It is now said that sewerage may be purified by electricity, which separates the offensive material, leaving the water comparatively pure. This is analogous to the discovery of purifying air from dust and smoke by electricity. Another use is the removal of warts, wens, and other excrescences. After making them insensible by cocaine, they are destroyed by electric currents and fall off, leaving but little appearance of a scar.

Scientific Progress.

THE STUDY OF THE PLEIADES.—The discovery of the nebulous condition of the Pleiades has been an almost startling illustration of what may be learned by sheer perseverance in exposing sensitive plates to the sky. Nearly thirty years ago M. Tempel, an exceptionally acute observer, detected a filmy veil thrown around and floating far back from the bright star Merope, and Mr. Common saw with his three-foot reflector, Feb. 8, 1880, some additional misty patches in the same neighborhood. In general, however, the keen lustre of the grouped stars appeared relieved against perfectly dark space. Great, then, was the surprise of the MM. Henry on perceiving little spiral nebula clinging around the star Maia on a plate exposed during three hours, Nov. 16, 1885. The light of this remarkable object possesses far more chemical than visual intensity. Were its analysis possible, it would hence doubtless prove to contain an unusually large proportion of ultra-violet rays. It is of such evanescent faintness that its direct detection was highly improbable; but since it has been known to exist careful looking has brought it into view with several large telescopes. It was first visually observed on Feb. 5, 1886, with the new Pulkowa refractor of thirty inches aperture, and M. Kammerman, by using a fluorescent eye-piece, contrived to get a sight of it with the ten-inch of the Geneva Observatory. The further prosecution of the inquiry is due to Mr. Roberts of Liverpool. With his twenty-inch reflector he obtained, on Oct. 24, 1886, a picture of the Pleiades that can only be described as astounding. The whole group is shown by it as involved in one vast nebulous formation. "Streamers and fleecy masses" extend from star to star. Nebulæ on wings and trains, nebulæ in patches, wisps and streaks seem to fill the system as clouds choke a mountain valley and blend together the over-exposed blotches which represent the action of stellar rays. What processes of nature may be indicated by these unexpected appearances we do not yet know; but the upshot of a recent investigation leads us to suppose them connected with the presence of copious meteoric supplies and their infalls upon the associated stars.—*The Edinburgh Review*.

BLAKE'S WEATHER PREDICTIONS.—Prof. C. C. Blake of Topeka, Kansas, says: "While we had been at work on planetary meteorology for more than twenty years, we had attained no substantial success till 1875. From that time to this we have calculated all the marked changes in the weather and for most of the time we have published them for twelve months in advance. We predicted all the severe winters and all the mild and open ones, all the wet summers and the drouths, as shown by the Almanacs we published in 1876 and following years. In 1885 we started *The Future* and predicted all the marked changes in the weather. In the fall of 1885 we first commenced telling of the drouth which we have had for the past two years. While our warnings saved many people from serious loss and suffering, yet if each one to whom we sent a sample copy had invested a dollar by subscribing for *The Future* the saving to the American people would have amounted to millions, and much of the present hard times would have been averted.

"It will be remembered that for two years we gave persistent advice in regard to economizing and storing corn preparatory for the drouth which we have had for the last two years. Most people laughed at us at the time, but the facts have terribly borne out our predictions and fully justified the warnings we then gave. Speculation and expansion was going at such a fearful rate that had it not been for the warnings we had repeatedly given for two years, we fully believe that the fearful tide of speculation

would have proceeded till into the early fall of 1887, when the great fact of the heavy shortage in the crops in nearly all the States on account of the drouth would have precipitated a financial panic.

We have been at work during the past winter making calculations for our Almanac, which is now ready for mailing. It gives our Weather Predictions from the 1st of June, 1888, to the 1st of June, 1889, together with suggestions as to sowing winter wheat this fall and as to what crops it is desirable to plant next spring, and as to what will be the best times for planting the various crops.

"Farmers and many others desire to know what the weather will be for many months in advance, so as to make their plans. This information we give in the Almanac. Recently the orders for our Predictions have been coming in, unsolicited, much more rapidly than when we were working for patronage. Nearly everyone who has had our Almanac last year has ordered it this spring, and most of them say they must have it at any cost, that the predictions proved to be correct, and that if we have not printed an Almanac this year they will pay an extra price for a manuscript copy of the results of our calculations. We could publish many extracts from letters which we have received, showing how highly our efforts are prized by the people and how accurate they think our predictions have been. The present Almanac also contains a long article on Tornadoes, giving the laws by which they are produced. The price of the Almanac is \$1.

EDISON'S NEW PHONOGRAPH has been shown at the Electric Club, 17 East 22d Street, New York, to a distinguished company of visitors. A large receiver was fitted on to one of the phonographs, and began immediately to reproduce the tune that had previously been played into it by a cornet.

There were phonographs placed in many of the rooms, and the audience scattered to experiment on them. Mr. Edison, Gen. Sherman and Col. Ingersoll spoke to the phonograph, and their remarks were repeated by it. Marshall P. Wilder told the phonograph some of his funny stories, and the company laughed as they were repeated by it. A compositor in another room set type by the dictation of the phonograph. What are we coming to? When the form of a revered teacher may be prisoned in a glass case with a lifelike countenance by carbonic acid, and his familiar voice and ideas come from it by the phonograph—the only immortality which the materialist can admit will be fully realized; but the enlightened know a better immortality than that.

THE GRAPHOPHONE which has just been brought out by the Graphophone Company of Boston, is a capital rival to the Edison Phonograph, and reproduces language or other sounds with great power and correctness. So it seems eloquence and music can be perpetuated and heard at any length of time afterwards. This surpasses Baron Munchausen's story of playing on a horn in arctic regions and the music freezing in the horn, but coming out in all its beauty when the horn was brought into a warmer climate. The man who cannot write his will can talk it and his voice be heard ever after to direct his executors or be heard in court. And if returning spirits can speak their words may be heard in this world.

THE TELAUTOGRAPH, according to Prof. Elisha Gray, proposes to supersede the telephone. He says: "I have already tested it to my own satisfaction over and over again. By my invention you can sit down in your office in Chicago, take a pencil in your hand, write a message to me, and as your pencil moves a pencil here in my laboratory moves simultaneously, and forms the same letters and words in

the same way. What you write in Chicago is instantly reproduced here in fac-simile. You may write in any language, use a code or cipher,—no matter, a fac-simile is produced here. If you wish to draw a picture it is the same, the picture is reproduced here. The artist of your newspaper can, by this device, telegraph his pictures of a railway wreck or other occurrences just as a reporter telegraphs his descriptions in words. The two pencils move synchronously, and there is no reason why a circuit of five hundred miles cannot be worked as easily as one of ten miles."

PRESERVATION OF LIQUIDS.—An invention equal in importance to Prof. Humiston's is coming out in New York, under the American Exhaust and Carbonating Company, at 10 Warren street. Our readers are familiar with the process for preservation of canned food by driving out the air with steam. Under this process the food will not last after the can is opened. By the new process the air is expelled, and carbonic acid gas substituted, which prevents all decomposition, and keeps the substances fresh and sweet. Liquids, such as milk, cider, wine, beer, fruit juices, etc., may be put in vessels so that a portion may be drawn out without injury to the remainder, which will keep well in its carbonated condition. Such a process might be made a substitute for embalming.

THE UNIVERSAL SOLVENT.—Three things were sought for by the ancient alchemist, the philosopher's stone, the elixir of life, and the universal solvent. The last of these, though long known to modern chemistry, has just been separated, but cannot be retained, simply because it attacks or destroys everything. This fury of the chemical world, says Mr. W. Mattieu Williams, is the element fluorine; it exists peacefully in company with calcium in fluor-spar and also in a few other compounds, but when isolated, as it recently has been by M. Henri Moissan, is a rabid gas that nothing can resist. It combines with all the metals, explosively with some, or if they are already combined with some other non-metallic element, it tears them from it, and takes them to itself. In uniting with sodium, potassium, calcium, magnesium and aluminium, the metals become heated even to redness by the fervor of its embrace. Iron filings, slightly warmed, burst into brilliant scintillations when exposed to it; manganese does the same. Even the noble metals, which at a melting heat proudly resist the fascinations of oxygen, succumb to this chemical siren at moderate temperatures. Glass is devoured at once, and water ceases to be water by contact with this gas, which, combining with its hydrogen, at the same moment forms the acrid, glass-dissolving hydrofluoric acid and liberates ozone.

PROGRESS OF PAPER.—Paper wheels, paper doors, paper pianos, paper lumber, paper basins, boxes, barrels, etc., are now rivalled by paper bottles, which are not only unbreakable, but cheaper and lighter than glass and are already extensively in use.

PAPER GLASS.—Paper window glass is now an assured fact, says *Golden Days*. A window pane is made of white paper, manufactured from cotton or linen, and modified by chemical action. Afterwards the paper is dipped into a preparation of camphor and alcohol, which makes it like parchment. From this point it can be moulded and cut into remarkably tough sheets, entirely transparent, and it can be dyed with almost any of the aniline colors, the result being a transparent sheet, showing far more vivid hues than the best glass exhibits.

METALLIC WOOD.—"The recently invented process," says *Iron*, "by which wood is made to take on some of the special characteristics of metal, has been turned to practical account in Germany. By this process the surface becomes so hard and smooth as to be susceptible of a high polish, and may be treated with a burnisher of either glass or porcelain; the appearance of the wood being then in every respect that of polished metal, having, in fact, the semblance of a polished mirror, but with this peculiar and advantageous difference, namely, that, unlike metal, it is unaffected by moisture. To reach this result, the wood is steeped in a bath of caustic alkali for two or three days together, according to its degree of permeability, at a temperature of between 164° and 197° Fahr. It is then placed in a second bath of hydrosulphate of calcium, to which a concentrated solution of sulphur is added, after some twenty-four or thirty-six hours. The third bath is one of acetate of lead, at a temperature of from 95° to 120° Fahr., and in this latter the wood is allowed to remain from thirty to fifty hours. After being subjected to a thorough drying, it is in a condition for being polished with lead, tin or zinc, as may be desired, finishing the process with a burnisher, when the wood apparently becomes a piece of shining polished metal."

AN ELECTRIC HAND.—At the great steel works in Cleveland a large electro-magnet is used, suspended from a crane, to pick up iron or steel bars and billets. It will take up eight hundred pounds, and as soon as the electric current is turned off after moving drop it in the proper place, thus doing the work of a gang of men.

CHEAP PETROLEUM.—Russia is far head of America in petroleum wells. A single well at Baku has averaged 32,000 gallons a day for twelve years, making 3,000,000 barrels. The Mirzeoff well produces 40,000 gallons a day. The Drojba well in 115 days spouted from sixty to a hundred and twenty million gallons. Two hundred of the Baku wells are now producing 500,000,000 gallons every year, besides the spouting fountains, from some of which the spray blows through the air eight miles.

PHOTOGRAPHING AT NIGHT.—The recent advance in the direction of making photography at night possible has been the subject of much interesting experiment among the societies. To Dr. H. G. Piffard, one of our prominent members, is due the credit of suggesting a practical method of taking photographs at night by means of a cartridge containing powdered metal magnesium, fired in an ordinary pistol. This gives sufficient light to make portraits, interiors, or copies at night, and is capable of much development. It will be no uncommon thing in the future for busy men who cannot spare time during the day to visit a photographer's gallery and have their portraits taken at night. Some members of the society have, with the aid of the apparatus suggested by Dr. Piffard, made trips through the cheap lodging-houses in the slums of the city, and made many interesting photographs which would have been impossible to make even a year or two ago without very cumbersome apparatus. — *Epoch*.

CAPITAL PUNISHMENT IMPROVED.—Murderers will hereafter in New York, under the new law, be privately put to death by electricity. Massachusetts is considering the subject, and has authorized prison commissioners to investigate the subject and report on it.

Practicing on Gullibility.

The easiest way to manage a runaway horse is to run with him, and the easiest way to manage the human animal is to fall in with his passions and prejudices.

The politician who addresses an audience of political partizans is well received in assailing the opposing party, and if he coins a few lies is not detected or exposed. The superstitious will accept anything that harmonizes well with their superstition, like the old lady who rejected her sailor son's stories of sharks and devil-fish, but was delighted when he propitiated her favor by telling her, that in lifting anchor in the Red Sea it brought up one of Pharaoh's chariot wheels. A credulous and Pharisaical egotist easily believes the assurance of Mrs. Eddy and her followers that his nature is divine, that he is not at all liable to disease, and that the external world is just what he thinks — nothing more — and that he can cure any disease by persuading the patient there is nothing the matter with him. A credulous spiritualist can accept almost anything coming to him as a message from spirits, through a medium; and a credulous or dogmatic materialist will accept anything, however marvellous, when told that it has been produced by an ingenious physical arrangement of machinery and trickery; that satisfies him. Like the negro, who believes in the almighty power of "conjuring," some materialists have unlimited faith in the power of prestidigitation to achieve the impossible, and do not even ask to be shown *how* it is done. Their faith is sufficient to cover the subject, and they will take the showman's word that he does the impossible, while they would reject the testimony of the most honorable and scientific concerning phenomena *not* produced by physical means, or by any deception.

The magical tricksters or prestidigitators understand this, and boast freely of what they can do, knowing that there is credulity enough to believe them. At the Debar examination trial in New York, they boasted largely of their ability to produce all the spiritual phenomena in open Court, and even to mesmerize Mr. Marsh. The reporters gave free circulation to their lying boasts, *not one of which was verified.*

At the present time (June 9), one of this tribe, Kellar, is in Boston, with the same false declaration, that he can do whatever is said to be done by spiritual power, and attempts by ingenious deceptions to impose this falsehood on his audience, although he was candid enough once, when he first met the Spirit writing of the famous medium, Eglinton, to confess that it was entirely beyond his power or comprehension, and the most eminent practitioners of magic in Europe have made the same confession. But as the whole business of such exhibitors is to deceive the spectators, they consider falsehood or false boasting a part of their regular business.

The way that Kellar imitates the spirit writing is not any more ingenious than the tricks of other impostors. Some of them use a false bottom or double slate, so that, after showing a blank slate to the spectators, they can suddenly remove the disguise and show the

previously prepared writing : this is the most common trick. Kellar's method is said to be to carve the message in the slate, and if not too closely inspected, the surface of the slate appears quite uniform and certainly free from any white writing. Then he professes to prove the absence of the writing by covering the slate with chalk marks and wiping them off, taking care that the chalk which has fallen into the crevices made by the writing is not removed. The writing then is conspicuously white and visible, and being held up as soon as the slate is dried, every one sees that the slate, which had been, as they suppose, wiped clean, has now conspicuous writing. Ignorant spectators being assured that this is an illustration of what is called spirit writing, are ready to accept the falsehood—the majority being too ignorant of the subject to know that in the case of spirit writing, as illustrated by Mr. Watkins, slates that we inspect and bring ourselves may be tied together and kept in full view upon the table, either in private or before a public audience, and that in a few minutes the process of writing may be heard, and when the slates are opened messages will be found written upon them, indicating a high order of intelligence—messages, in some cases, which could not have come from the intelligence of any persons present, being beyond their knowledge and capacity.

Miscellaneous.

BOSTON AS IT IS AND AS IT WAS—With all its culture and talent, its eminence as the "Hub," its money-bags, its general omniscience, and its conservative bigotry, there is still a darker side of Boston life, represented not only by its hoodlum element, but by a better dressed element that worships the fist hero, John L. Sullivan, and thinks baseball the perfection of manly glory and delight. The newspapers speak of the great cost of the new baseball pavilion, the great crowds in attendance, including the Governor and other dignitaries, and the royal salaries of the leading players.

This, however, is much more innocent than the old times in Boston. At the recent dinner of the Episcopalian Club, at the Vendome, the president, Dr. George C. Shattuck, told how hard a time the Episcopalians had in coming among the bigoted Puritans :

"The colonists did not object to State and Church being connected," said he, "but they insisted that in such connection the Church should be supreme, and this was a most important feature in the organization of their Commonwealth. Bishops were officers of the State, and, therefore, were especially obnoxious. A pious young Congregationalist, hearing on good authority that a bishop was on his way from England, after praying and deep searching of heart, decided that it was his bounden duty to assassinate him as soon as possible after his arrival, so great harm and mischief was to be apprehended from the presence of a bishop in this country." But this spirit of antagonism, which allowed no white surplices, no dumb reading of prayers, no kneeling at the sacramental altar, died down to a considerable extent in half a century ; and when, in 1686, Rev. Mr. Ratcliffe arrived in Boston, secured a cheaply furnished room in the town house for holding services, and applied to the council for means of support, he was munificently allowed the contents of his contribution box, which supplied him with the extensive salary of \$250 ! Intolerance, however, was not

dead, and a sturdy Anglican, one of Mr. Ratcliffe's little flock, writes: "We resolve not to be baffled by affronts, some calling our minister Baal's priest, and some of their ministers from their pulpits calling our prayers leeks, garlicks and trash."

All this is buried now, and the bigotry that fought against Parker and Pierpont is silent too, but, in its essential conservatism Boston is not changed.

Nevertheless, Boston has many beautiful illustrations of benevolence. It is making rapid progress in industrial education. The two hours a week given to teaching sewing in the public schools have given great satisfaction.

The work of the Baldwin Place Home for Little Wanderers, for over twenty years, has been a model of benevolence. "We take children (said Mr. Toler, its manager) from the streets and cellars of the city, from the poor houses of the country, from the control of drunken and vicious parents, and after a few months of comfortable home life under good teaching and civilizing influences, place them in other homes for adoption." About six thousand have thus been saved from ruin. As Mr. Richardson, of the Home, said, "one dollar expended in training and keeping children away from ruin is more effectual and accomplishes more than ten times that amount expended in reforming, or in attempting to reform, the already vicious." The Home is to have a new building, in a better location, on West Newton Street.

SOCIAL CONDITIONS IN THIS COUNTRY. — A writer of a paper on "Pauperism" in the *International Record* for January, lays it down as the great geographical law governing the distribution of pauperism in the United States, that "the ratio of paupers to the total population diminishes alike from North to South and from East to West." "In other words, if New England or Massachusetts be taken as a starting-point, it matters not in what direction a line be drawn, the largest amount of pauperism will be found to exist in Massachusetts; and the smallest in the States farthest removed from Massachusetts, while the intervening States will exhibit, on the whole, and with scarcely an exception, a gradual decline in something like the degree of their removal from the extreme northeast." Taken by groups the highest percentage of pauperism is in the Eastern and Middle States, the medium percentage in the Western States east of the Mississippi, and in the Southern States lying north of the southern boundary of Tennessee on a line running from the Mississippi to the Atlantic. The lowest percentage of pauperism is in the Gulf States and the States west of the Mississippi. — *Home Journal*.

THE DECLINING BIRTH RATE. — The *Boston Herald* says that "The work of the registration office in compiling vital statistics for the year rapidly drawing to a close, demonstrates somewhat inexplicable phenomena scarcely creditable to the civilization of Boston. For some years a strange falling off in the birth rate has been noticed, and this year it will be emphasized. The moral as well as the social standard of a community may be pretty accurately estimated by its vital statistics, after making allowance for errors in compilation. The phenomena above referred to has attracted the attention of the registrar of this city and the State Board of Health. Although the city is enjoying a decade of unparalleled prosperity, and increasing in inhabitants in a steady ratio that is rapidly swelling the population to half a million, the increase being over 10,000 a year, there is an actual decrease in the percentage of births to the living population. No better proof of the statement that the birth rate of Boston is falling off can be given than the official statistics." In 1857 one child was born to every 28 inhabitants in the city, and this year but one in every 33.33.

"It is not difficult to locate the district where the diminution occurs," said the registrar. "It takes place in the Back Bay district, in the 9th, 10th and 11th wards. The causes are difficult to ascribe, although students of modern civilization claim to understand the reasons. It is certainly a fact that as communities grow older and more swayed by the dictates of 'society,' practices are introduced that have a hurtful effect upon posterity."

Strange as it may appear, the percentage of births to population in Boston, and throughout the commonwealth at large, is smaller than in any European country save France. During the period of 20 years from 1861 to 1885, the Massachusetts birth rate per thousand estimated population bore the following ratio to foreign countries :

	1861 to 1880.	1885.
Massachusetts	26.0	25.1
England and Wales	35.3	32.5
Scotland	34.9	32.3
Ireland	26.2	23.5
Denmark	31.2	32.6
Sweden	30.9	29.6
Austria	39.7	37.4
Prussia	38.6	37.6
Netherlands	35.8	34.4
France	25.9	24.3
Hungary	42.8
Switzerland	30.6	27.5
Belgium	31.8	29.9
Italy	37.1	38.1
German Empire	39.6	37.1
Spain	37.1

The rate of births in Boston is lower than through the State at large."

The Back Bay district in Boston, where the greatest decline is observed, is the centre of wealth and fashion. In contrast to these statistics, Marion Nanderpool, in Whitley County, Kentucky, has been married 26 years, and is the father of 22 children, none being twins or triplets. He is 45 and his wife 43. Fifteen of the children are living,

ANTHROPOLOGY. — The International Congress of Anthropology was announced to meet at Columbia College, New York, on the 4th, 5th, 6 and 7th of June. But *what is a Congress of Anthropology* in the present state of collegiate progress, when there is no systematic science of anthropology in their curriculum. The organization of soul, brain, and body being entirely unknown, — many not even knowing that they have a soul, none professing to know how the soul and brain are related, or how the brain exercises the intelligent control of the body, or manifests the elements of human nature, or sympathizes with the body, or how the body reacts on the brain, — it is evident that there is no true science of anthropology to discuss, and that an International Congress of Anthropology is like the play of Hamlet with "Hamlet," himself left out. The subordinate characters may be there, but what an unsatisfactory performance when Hamlet is not there, and everything reminds us of his absence. So in the Anthropological Congress, there being no Anthropology, people do not expect it, but are satisfied with the accessories and tributaries of the science. It is like a gathering of workmen, with the bricks and mortar, shingles, nails, spades and lumber, but no architect to plan or direct a building, and no idea that a building could be erected. Nevertheless, it is well to gather the materials and pile up the lumber, even though much of it may be useless. The Congress may, therefore, be a useful institution, and some of its piles of mate-

rials may be useful to the architect and the builders,—if not to erect the main edifice, at least to pave the grounds and supply out-buildings.

Ethnology, sociology, heredity, education and the origin of man, ethnography, prehistoric archæology and archæology in general, will be the leading themes, all to be discussed without any direct reference to anthropology.

The foreign membership of the society contains many distinguished names, and it would be eminently proper that the science of anthropology should be presented, but as the subject is quite foreign and unknown to the membership for want of adequate publication, it is not probable that at present it would secure proper attention. On the contrary, the dogmatic spirit of the old medical profession would stand in the way. But the time is coming when it may be presented.

An intelligent correspondent says, "From my view, some few of the papers were instructive and interesting, but if some of the authors and copyists would attend the College of Therapeutics, and study your book of *Anthropology*,' which you published years ago, they would know how to study and learn something practical about man."

VERACITY OF TALMAGE. — The imaginative falsifications of Talmage were mentioned in the last JOURNAL, without doing full justice to the subject. It has been shown since, not only that Talmage himself preached good spiritual doctrines in New Hampshire last summer, but that he had many spiritualists in his church; his very right hand man, chairman of the board, is a practising spiritualist, Dr. H. A. Tucker, who is said to have grown rich acting as a medium, and then making prescriptions for the sick, and even for Talmage's own family. "Eleanor Kirk" asks: "Why, if this man belongs in hell, is he allowed to occupy the best seat in the Tabernacle and manage the most important affairs of the church?" Evidently Talmage's "words of sound and fury" signify nothing, for Dr. Tucker heard the discourse, and congratulated the speaker. What a precious set of hypocrites!

A GOOD SOCIETY. — New York has a number of clubs of ladies interested in various intellectual and benevolent matters, but none better than the one which the *Home Journal* describes as follows: "One society that has given itself no name is a large coterie of women devoting their best mental and sympathetic energies to the study of 'Poverty, its causes and its cure.' These students of misery and hopelessness have supplied themselves with such published authorities as furnish especial information upon these grave subjects, and also, by personal investigation and familiarity with the poor, they hope to discover at least some of the concealed causes of human wretchedness and perhaps a cure may be found and applied, or at least an amelioration of the most grievous phases of their poverty. A year hence it is confidently expected that a concise report of the researches of this band of earnest, intellectual women, will be published, after which time the professional philanthropist will doubtless be wiser than he is at present about the best means and methods for improving the condition of the poor but courageous, industrious classes, also that of his despairing brother who is nearing the threshold of the Hôpital de Charité."

FAILURE OF PROHIBITION IN CITIES. — Notwithstanding Neal Dow's favorable report of temperance in Maine, the cities seem to defy the law, and liquor selling is worse than ever in Portland and Bangor. The arrests for drunkenness have become more numerous and Rev. F. T. Bayley of Portland says: "The state of demoralization is so great that pupils are found drunk in the public schools. The other day a policeman had to be called in, Mr. Bayley says, to remove an intoxicated primary school pupil. A teacher in

this school says that in one room every boy but one allows that he drinks. A teacher in the free kindergarten says that a child of nine years comes to school frequently intoxicated. An important law for temperance has been passed in Waldeck, Germany, forbidding the granting of a marriage license to a person of intemperate habits.

EDUCATIONAL PROGRESS. — "I want in this school that one sex shall have equal advantages with the other, and I want particularly that the females shall have open to them every employment suitable to their sex," said Senator Leland Stanford, in reference to his great University in California.

"IN FRANCE the importance of educating women in matters relating to farm work and the garden (says London *Queen*,) are thoroughly realized. Under the present system in France the schoolmistresses of the future are given instruction in those departments of farming which generally devolve on the farmer's wife or daughter, as the syllabus of their second year's studies comprises gardening, fruit-growing, vegetable-growing, flower-growing, for the cultivation of flowers for ornament and for making perfumes. General instruction is also given in making cheese and butter; elementary instruction in sheep-keeping and the piggery; the poultry yard, rearing and fattening poultry, pigeons, rabbits, bees and silkworms."

THE BIBLE OF NATURE; or, The Principles of Secularism. A contribution to the Religion of the Future. By FELIX L. OSWALD. New York: *Truthseeker* Office. 240 pages. \$1.00. This is an interesting work. The author, who is a decided agnostic, is one of the most vigorous and brilliant American writers, capable of instructing and interesting those who differ from him in opinion. The book merits a more extended notice in future numbers of this JOURNAL.

WOMAN'S RIGHTS. — In the National Democratic Convention at St. Louis, Mrs. E. A. Merriwether was allowed to address the convention on woman's rights. Mrs. M. is remarkably vigorous and sarcastic in language, and though received quite cordially at first, she was not allowed to finish her speech. The women of the woman's rights party would succeed better if they were less masculine in their methods. The persuasive method is woman's forte.

THE INTERNATIONAL COUNCIL OF WOMEN has not received from the JOURNAL OF MAN (for want of space) the attention it deserved. According to "Alpha," Mrs. Clara Hoffman of Kansas City, Mrs. E. L. Saxon of Kansas, Mrs. Chant of England, Francis Willard and Anna R. Powell were earnest, forcible and inspirational in their speeches, and the whole were faithfully reported in the *Woman's Tribune* of Beatrice, Nebraska, and will be published in book form. This paper, well edited by Clara B. Colby, and published weekly, eight large pages, at only one dollar a year, is worthy of the patronage of all friends of woman's progress.

VACCINATION POISONING. — According to the *Boston Globe*, Dr. Warren S. Stokes of Boston, connected with the College of Physicians and Surgeons, died on the 18th of June from blood poisoning through vaccination. Dr. Wallace, who vaccinated him, is said to have inserted a double dose of the vaccine matter used in the dispensary. Dr. Stokes was in fine, vigorous health previous to the vaccination. His attack was very severe, accompanied by wild delirium, and the physicians did not appear to understand his case. "A member of the Massachusetts Legislature said yesterday that the compulsory vaccination law was doomed, and that efforts for its repeal would be made in the next General Court." The physicians seem to be entirely at a loss to make out a diagnosis of the disease of which Dr. Stokes died.

PEACE OR WAR.—Rev. Dr. A. A. MINER of Boston has the honor of raising the first pulpit voice in remonstrance against war measures. He preached from the text, "Put up again thy sword in its place," and among other wise things said: "We have this picture before us. Our United States Congress is to-day proposing the appropriation of some \$125,000,000—that is to say, \$9,000,000 for 11 years. The proposition is in the hands of the Senate committee ready to be reported to build fortifications at some 25 to 40 points on our sea coast, from the extremity of Maine up the Pacific coast and far up to Oregon. This proposition aims at protecting us against the aggression of foreign nations. Has any foreign nation threatened to interfere with us? Who proposes to assail us? Do we not intend to mind our own business? Be just and fear not. Why should we waste millions on fortifications, not one of which could stand an hour before the great armies of the world to-day. We have not a fort on our entire coast that could stand an hour before the most powerful guns at present employed in European warfare. So when we shall have poured out our money like water, and shall have built fortifications at various points, and armed them with the most powerful armaments which we can command, and expended millions of money on manning these fortifications, we shall then have a very faint show of defence, and there will be long stretches of coast to which foreign powers can send their ships. Our money will have been wasted and our defences will amount to nothing. Besides, this \$125,000,000 which they propose to appropriate now will be only the beginning of the expenditure."

THE POPE'S AUTHORITY is not recognized by the Parnellites in Ireland. They say he is mistaken as to the facts when he condemns their course, and that he has no right to dictate their political action. The Pope has not ventured to condemn the works of Henry George.

ORIENTAL.—The Hindoo lady, Pundita Ramabai, said, at a meeting in Boston, that she was not learned in the profound philosophy of the East. She was practical and came from the class of Marthas. Her purpose was to interest Americans on behalf of Hindoo women, who were considered in her country, by the common people and the priesthood, as cattle and sheep. Her women were taught to cook, and to please their husbands, who were very important personages. No woman in her country could be saved unless they were married. They were not educated, they had no religious books. There was no sympathy for women. She wanted about \$75,000 for schools. Query.—Why are Americans so interested in Buddhism and Oriental Philosophy, when the deep degradation of women in India compels the philanthropist to come to America for help in that work of redemption which the wealth of India ignores? Let Oriental philosophy teach redeeming truth, instead of obsolete speculations, and let Buddhism reform to its own household before it asks our reverence or discipleship.

THE BEST WOMAN IN FRANCE.—Madame Boucicaut, whose funeral at Paris was recently attended by immense multitudes, blocking the streets, was the head of the greatest mercantile establishment in Paris, the Bon Marche. She and her husband began in poverty. At the head of her large establishment she looked to the welfare of all employed, who were thousands, and gave them a co-operative interest. She gave them all legacies from \$20 to \$2,500, and founded so many schools, asylums and other institutions of benevolence, that it would be tedious to describe them. After all her donations and legacies, there were fully \$10,000,000 left, which she dedicated to a new hospital to bear her name.

THE GARDEN OF EDEN, it is now claimed, was located in Central America. Mme. Alice Le Plongeon, wife of an eminent man of science, is the prophet

of the new belief, and she is also a believer in the submerged continent of Atlantis. She says that among the manuscripts of the Mayas, the prehistoric inhabitants of Yucatan, is an account of the sinking of Atlantis, which once joined America to the western coast of Africa and Europe. Other Maya writings give us, she asserts, the whole history of the intellectual development of the human family, free from all priestly or philosophic tinkering." On the other hand, the Rev. Dr. Warren, the president of Boston University, maintains that the garden of Eden was at the North Pole, as that was the first place sufficiently cooled to admit of life.

KISSING THE BIBLE AND SEALING THE DEED.—A doctor in New Jersey made quite a stir in court recently, by objecting to kissing the Bible before giving testimony, considering it a dirty practice with a dirty book, and a ready method of diffusing contagious disease. It is an old absurdity and so is the law requiring seals on deeds. David Dudley Field recently said at New Haven: "Another of the anomalies which should be eliminated from our legal system is the distinction between sealed and unsealed instruments. Can anybody give a reason for this distinction, except the historic one, that seals were used when most men were unable to write? Now, when most men do write, why use the seal? Or if the seal is used, why give it a significance and importance not given to the writing? I find in your Revised Statutes a provision that a deed of real property must have a seal and two witnesses at the least. You cannot transfer to your neighbor a cabin for a hundred dollars without these ceremonials; but you may transfer to him a million dollars' worth of railway stock by a simple signature, without seal or witness. Upon a sealed instrument you may bring suit within seventeen years; but if the seal is wanting you must sue within six years. Is it a reason why these anomalies should be retained in the valley of the Connecticut, because they come from the valley of the Thames?"

PROF. W. D. GUNNING, the brilliant writer and distinguished scientist, died on the 14th of March last, at Greeley, Colorado, where he had gone to take charge of the Unitarian Church. There was a fascinating boldness and brilliance in his writings, which is as rare as it is admirable. When the JOURNAL shall be enlarged, it may have room for extracts. Prof. Gunning was born in Ohio in 1830, and has held professorships in a few colleges. Geology was his chosen theme, and his work, "A Life History of the Planet," is one of great merit, worthy to rank with Prof. Denton's, but different in character and style. One would hardly suspect from Prof. Gunning's writings that he was ever pastor of a church.

THE DISS DEBAR TRIAL.—Mr. Townsend arose to plead for mercy. He called attention to the fact that Ann O'Delia had deeded back the property after she got into the Tombs; that she was large and fat, and not able to stand the pressure of confinement as well as some women, that the season of the year was unpropitious for a long term. As for "this gentleman," there had been no evidence, save the testimony of Mr. Bierstadt, connecting him with any conspiracy.

"I am innocent of conspiracy," said the General, hoarsely.

And then Judge Gildersleeve said: "As I have already told the jury, this is not a question of religion. Spiritualism was not in any sense on trial, and I took pains to instruct the jury that you stood on the same plane before the law as any other defendants. The jury convicted you because they were convinced by the evidence that in your art dealings with Mr. Marsh you were not honest. It satisfied them, as it did me. I have studied this case very carefully, and I must say that I can find in it nothing which calls for leniency. There is much to aggravate your offence. You

have dragged down in shame the sacred tie of marriage, with an open and brazen mockery of a high spiritual marriage that almost passes belief. Beyond her false pretences, the female defendant has added a denial of her mother with a brazen and unnatural hardihood which, in all my long experience with criminals, I have never seen equalled. I can find nothing to mitigate your punishment, save the very strong recommendation of the jury, which it is my duty to heed."

The judge said he would take into consideration the prisoners' two months in the Tombs. He would remit the \$500 fine, as they had no money, and he would sentence each to the penitentiary for six months.

When he had finished they turned away without a word, and were hurried to the Tombs. Wednesday afternoon they join the regular squad which sails for Blackwell's Island.

Mr. Marsh will pay the counsel fees, but have nothing more to do with the Diss Debars. He admits that Ann O'Delia is a great fraud, but holds to the belief that she is a great medium.—*N. Y. World*, June 17.

The incidents of this trial are a disgrace to New York civilization. The suppression and distortion of evidence in the press reports, the contemptuous or scurrilous reference to spiritualists, the imprisonment of Dr. Lawrence and his son, without a particle of evidence against them, in cells at the Tombs more offensive by far than the Black Hole of Calcutta, are disgraceful to the city. It is probable that the libel suits instituted by Dr. Lawrence may teach a lesson to reckless scribblers.

It is a curious illustration of the blind partizanship of mankind generally, that not a single spiritual paper gave its readers any correct idea of the infamous and criminal life of Ann O'Delia Salomon, while not a single paper, on the other side, gave its readers any just idea of the evidence of her wonderful mediumship.

BEECHER'S SUCCESSOR.—May 27, 1888. Rev Lyman Abbott, D. D., accepted the permanent pastorate of Plymouth Church today. At the close of the morning sermon he said that, when he took the temporary pastorate, he had no idea that he would be called to remain permanently. The nearly unanimous action of the church Friday night had determined him to accept a position which he as well as all others knew he was not completely fitted for."

MRS. F. O. HYZER, whose eloquent discourses have done so much to elevate and refine the sphere of the Spiritual rostrum, is now residing at Ravenna, Ohio, from whence she can respond to invitations to lectures which are not too remote.

War or Peace? Voice of Psychometry.

The German Emperor, the conciliatory Frederick, has passed away, according to the psychometric prediction of Mrs. Buchanan, four months ago, that he would not last beyond the early portion of the summer. How utterly worthless was the diagnosis of the fashionable English surgeon, Sir Morell Mackenzie, who receives a princely income for his blundering opinions.

The accession of Emperor William revives the European war scare. The brilliant quidnuncs who send dispatches across the Atlantic, the generals who look on the pessimistic and dangerous aspect of events, and the American politicians, guided by the newspapers mainly,

have repeatedly anticipated war in Europe, when the wiser voice of psychometry, through Mrs. Buchanan, pronounced it impossible; and the proclamation of the new Emperor has renewed their apprehensions.

To-day, June 20, the war scare has arisen in force, and to judge of its value, I submitted the new Emperor to the searching psychometric investigation of Mrs. B., who touches without seeing, and pronounces without knowing, the object described. The following were her expressions, accurately reported:

"This is a public character. It is not one I know much about. He seems a foreigner. There is something in the character that is stubborn. I cannot say I admire him. There is good deal of pomposity and love of power. He feels his dignity wonderfully. He has been looking forward to his position for a long while. I feel that this man has a great amount of self-importance, and would not take any insult or any dictation from anybody. He wants his own ideas and ways in everything. I can't help thinking this must be the new Emperor. [No matter; give his character]. He will endeavor to have the people feel that he is their friend, but there is a great deal of aristocracy about him. I think his policy is peace, but he will not stand any menacing talk from other nations. He has fight in him, and has a very peculiar, arrogant nature. He is not as good as the Prince of Wales. There will be a sputtering for a while, and a great deal of dissatisfaction with him; but I think it will be his policy to live amicably with all nations, though he may not be as conciliatory as his father. There is no intrigue about him; but he is proud, arrogant, and self-willed — though I do not think he will get into war. I think Bismarck will keep him from it.

"It does not look like war. He will be excited against the Russians, but I do not think it will produce war. There will be a great deal of agitation and dissatisfaction among the nations. They hardly know what they want. They are overflowing with bile, but not going into war. He will endeavor to keep up his dignity, and give his people a good ruler. I think he will in time favor education. I do not think he will be oppressive, for that would be bad policy. The general character of the government will not be changed. He may concede some things to the people, and respect the old Emperor's policy. I think he will keep on good terms with Bismarck, and his reign will be conciliatory. [Yet war is apprehended to-day.] I do not believe it.

"[But the despatch from Berlin published to-day says: 'They all predict war — the *Standard* asserting that the last barrier of peace was swept away by Frederick's death. Here, in Berlin, the talk is war. Every officer in the army is eager for it. In Paris, people worship a demagogue, because he is believed to awe the Germans. In Berlin, the talk is war, first, last and forever.' What do you say?]

"I don't see any war. Preparations and menacing talk will not amount to war. His wife is humane; but is not so much of a politician as his mother. He has a stubborn will, but would be influenced by able advisers."

College of Therapeutics.

The tenth session of the College of Therapeutics, which ended on the 12th of June, was a deeply interesting time to all concerned. Every day brought forth an additional revelation of rare and important knowledge concerning the mysteries of life and the true art of healing, which had been preceded by a clear, practical exposition of the anatomy of the brain, more complete and intelligible than the usual instruction in medical colleges. The entire class were successfully trained in the practice of psychometry, and successfully pronounced upon remarkable characters and remote localities — describing those who lived more than a thousand years ago as well as our contemporaries. A startling event occurred one evening, when the class with great unanimity described one of the most conspicuous political characters in this country, and then, in a prophetic spirit, announced that he would die suddenly within three years. This gentleman, who was most accurately described, is now in the full vigor of an energetic and successful life, and if this prophecy is fulfilled it will be a remarkable illustration of psychometry.

In the application of electricity, the class were made familiar with the proposition unknown and denied in medical colleges, that medical potencies can be conveyed by electricity. The class being arranged in a connected circle, the potencies of various medicines were sent through the entire company, and distinctly felt by each, thus demonstrating what will hereafter be a very important feature of medical practice — the control of disease by imponderable influences without the actual administration of drugs.

In the concluding exercises, the most interesting of all, there was an exposition of the basic philosophy of the universe and the laws of expression in oratory, heretofore partially revealed by Delsarte, without the knowledge of its scientific basis, which was especially interesting to students and teachers of the Delsarte system in attendance, one of whom has published a fine exposition of the Delsarte system, but readily recognized the superiority of a profound science over the best efforts of empirical genius. The class, assembled from distant regions, united heartily in the following expression:

SENTIMENTS OF THE CLASS.

“The undersigned, students of the College of Therapeutics, speaking in behalf of more than a hundred others who have attended the instructive and eloquent lectures of Professor Buchanan, with satisfaction and delight, feel it their duty to inform the intelligent public of the marvellous discoveries in the constitution of man, which have been not only lucidly presented, but positively demonstrated by experiments in our presence, in which we have actively participated. These discoveries, which have been presented only in medical colleges and before scientific committees and which have had as yet, a very limited publication, are regarded by the enlightened physicians and medical professors who have attended the demonstrations as by far the most important in the whole history of medical science, as they reveal the heretofore unknown laws of the brain and nervous system,

and introduce many new methods in medical and electric practice, which, we believe, will ere long be represented by a medical college of a high order.

"We make this publication to attest the fact that we, in common with all others who have had the pleasure of witnessing the demonstrations of Dr. Buchanan in therapeutic sarcognomy, psychometric diagnosis and electro-therapeutics, regard them as beyond the *shadow of doubt* and as surpassing, both in philosophic importance and practical utility any physiological discoveries of the present century, *and laying the foundation* for a truly scientific system of therapeutics.

"Boston, June 9th, 1888.

LESTER A. HULSE, Lowell, Mass.

EDMUND B. MYERS, York, Penn.

WM. E. WHEELOCK, Moline, Illinois.

CHARLES H. SIMS, Boston, Mass.

A. J. SYMES, Cleveland, Ohio.

R. G. MAXWELL, Resaca, N. C.

H. A. CAMERON, Folkestone, England.

ALICE M. DENKINEJER, Boston, Mass.

ANNIE M. CLARKE, New London, Conn.

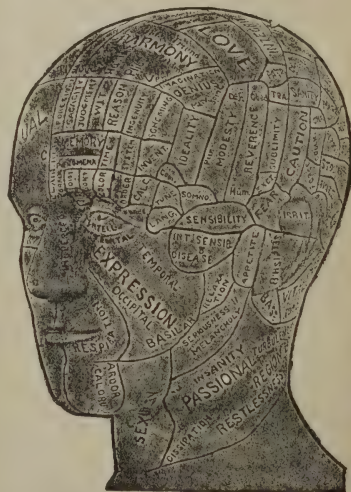
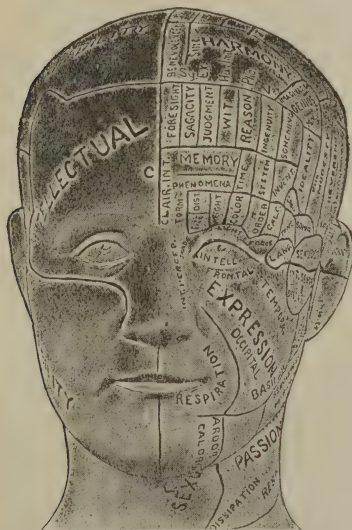
ADALINE E. COLT, 199 Main St., Hartford, Conn.

A. KNOBEL, Louisville, Kentucky.

J. P. CHAMBERLIN, S. Weymouth, Mass."

"Boston, June 9th, 1888.

"Presented to Dr. J. R. Buchanan, as the unanimous voice of the *class* of the above date."



By reference to the above engravings, the reader will better understand the following chapter on the Intellectual Region of the Brain. The frontal organs give projection from the ear forward and extending over the face. The Deliberate region is indicated chiefly by breadth of the forehead and the sensitive region by the breadth behind the eyes, above the cheekbone, from the eye to ear.

Chap. XIII.—The Intellectual Region of the Brain.

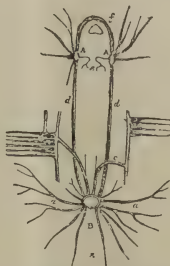
Fundamental plan of nervous system, illustrated by crab, oyster, slug, and insects — Power corresponds to development — Divisions of the sensitive and motor systems in man and animals — Dependence of the sensitive perceptive system on the anterior vital — Relation of the intellectual organs to the occipital — Doctrine of CORRELATION — Frontal development of Caucasian, Mongol and African — Contrast of beaver and fowl — Region of Perception, Intuition, Shade, Light, Form, Size, Distance, Weight, Color, Sense of Force, Order, Calculation, Tune, Hearing, Language — Sensibility and its numerous subdivisions, including impressibility — Influence of Sensibility on character.

The fundamental conception of a nervous system is that of an apparatus to receive impressions and another apparatus to produce action, the former guiding the latter. By means of the two the animal recognizes its environment and acts to adapt itself thereto or to improve it. In the simplest forms, as in the oyster and crab, the two structures are distinct and widely separated. In the crab, for example, the anterior (supra-oesophageal) ganglion, A, which corresponds to the intelligent brain and receives the sensitive nerves, is connected by two slender threads to the posterior or thoracic ganglion, B, which supplies the muscular system and is much longer, corresponding to its strong muscular system.

In the oyster, the posterior ganglion, B, enabling it to voluntarily close its shell by the adductor muscle, is relatively large, and its limited intelligence or sensibility belongs to its small anterior ganglia, A, A. It is said that the shadow of a passing boat will cause the oyster to close its shell.



Nervous system of the crab. A. Cerebral ganglia. B. Pedal ganglia, or spinal cord.



Nervous system of oyster. (Garner) A. A. Anterior ganglia. B. Posterior or branchial ganglion inlobed. aa. Branches to mouth. c. Duct to gills. d. d. Connecting trunks. e. Transverse filaments, uniting anterior ganglia. f. Arch over oesophagus.



Nervous system of the common slug. (Baly.) A. A. Cephalic ganglia. B. B. Branchial. c. Pedal. d. Pharyngeal.

In the common slug we find the two anterior cephalic ganglia, A, A, above the oesophagus and the inferior or sub-oesophageal ganglion, B, B, sending nerves from C through the locomotive muscular system, and from B to its limited respiratory system. (The small ganglia, marked D, supply the pharynx.)

From the small brains or ganglia of insects and mollusks we can learn but little of development, yet we see the superiority of their physical force to their intelligence in the superiority of the posterior ganglia, and we may also discover the increased development of the anterior ganglia when greater intelligence is developed. "It is (says Sir Samuel Solly) an important fact in relation to the function of nerve, that the brain of the perfect insect or imago is very much larger than that of the caterpillar. The butterfly is endowed with very perfect organs of sense

and locomotive powers, which enable it to roam from flower to flower, and perform the important office of reproduction : its organs of vision are large and complicated. The poor caterpillar has comparatively imperfect organs of sense, and has but one office to fulfil, namely, to procure food and convert it into nourishment for the development of larger nervous centres, and a more highly endowed animal. By

Fig. 21

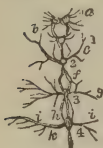


Fig. 22



Fig. 23



reference to these woodcuts, the student will observe, in fig. 21, the two little cerebral ganglia, scarcely larger than the œsophageal or respiratory.² (Fig. 21 shows the larva full-grown, two days before changing to the pupa state. Fig. 22 shows also the head of its nervous system, thirty days after changing to the pupa state; and Fig. 23 shows the development of the perfect insect, *Sphinx Legustri* — the butterfly — (after New-

port). There are other important changes, but I present merely the superior extremity, to show the increase of the cephalic ganglia or brain in the change from caterpillar to butterfly.)

To quote from Mr. Newport:³ "In these inferior Myriapoda [many-footed crawlers] in which the power of locomotion is distributed equally to every segment of the body, the brain itself forms but a small proportion of the whole nervous system, and the faculties of sense are less perfect than in insects; while the nerves of organic life, and their ganglia, are nearly equal in volume, as in the *Julus* [resembling centipedes and sometimes called gallyworms] to the whole brain or organ of volition. The very reverse of this is the case in insects. In those in which the faculties of sense, more especially of vision and smell, and the power of voluntary motion are carried to their greatest extent as in volant insects, the gregarious Hymenoptera, Neuroptera, and Lepidoptera [such as bees, wasps, dragon flies and butterflies], the volume of brain bears a much larger proportion to the rest of the nervous system, and the ganglia of organic life a smaller. This is more especially the case in the perfect insect, in which the volume of brain is not merely relatively but actually increased in size during the changes from the larva to the perfect state; thus leading to the inference that the importance of the visceral nerves is gradually diminished in proportion as those of action, volition, and active existence become augmented."

Thus does the structure of insects and worms illustrate the law applied first by Gall, that the development of all parts of the nervous system corresponds in size and structure with the energy of its functions. The application of this law to the study of man carried him so far beyond the medical faculty that they could not keep pace with his powerful mind.

This separation of the sensitive from the muscular-active system can be traced throughout the animal kingdom, although they are not so simply and widely separated in the higher orders. In man, the cerebellum or physical organ is situated inferiorly and posteriorly, and the energetic or reactive portion of the brain, as shown already, is situated behind a vertical line erected from the cavity of the ear, while in the spinal cord the sensitive and motor faculties are in separate columns, although their demarcations are not yet absolutely ascertained. Their relative position is not the same as in the brain, the motor power being more anterior and the sensitive posterior. But if we recollect that the spinal column throughout the animal kingdom is nearly horizontal, we perceive that the motor function is inferior and the sensitive superior, as in the brain the strictly physical forces are inferior, while the emotional, including moral sensibility, are superior. We recognize the posterior part of the superior region in man as energetic, although it is not strictly muscular, because it sustains the energy of the brain, and is thus a source of power. Analogy would suggest that the posterior columns of the cord, though not really muscular, may have something to do with combining and regulating the movements.}

The sensitive and active, or anterior and posterior regions of the brain in man, though distinct and even contrasted in function, are, nevertheless, so closely united in action, so uniformly co-operative and closely associated in all the affairs of life which require their harmonious and synchronous co-operation, that we cannot fully understand either in an isolated manner. On the contrary, the study of the cerebral organs gives us a clearer idea of the unity of the human constitution differing materially from the old phrenological scheme. Thus, for example, there can be no action of the frontal or intellectual half of the brain without the synchronous or prior action of the occipital half, for without the latter there is no vital force, circulation, muscularity or life.

As flower and leaf depend upon trunk and stem, so do intelligence, sensibility and refinement depend upon the vital energies which belong to the posterior half of the brain, which sustain the pulsating heart, the breathing lungs and the digestive viscera. As it is impossible to develop the dense foliage of the beech and the copious flowers of the apple-tree without a substantial trunk, so it is impossible to develop the mental energy of the forehead and the generous flow of benevolence and humor without the elements of the posterior brain, which originate physical power, strength of character, energy and will, giving power to every mental and physical endowment. A feeble, timid, vacillating, indolent and nerveless character cannot manifest any great intellectual power, or attain any success in intellectual studies. An act of the will is necessary to every intellectual effort, and without the concentrative power of will the mental faculties are helpless. Sir Isaac Newton claimed for himself no intellectual superiority but in the power of concentrated attention.

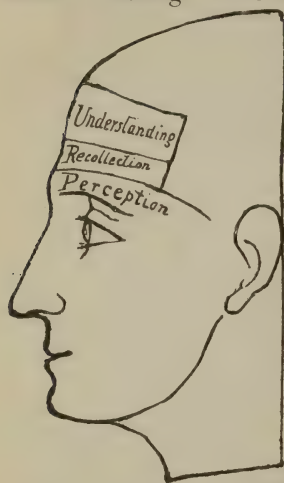
In addition to the general relation between the elements of character and the intellectual powers, there is a specific relation between each anterior and its corresponding or correlative posterior organ, and this antero-posterior CORRELATION OF ORGANS is one of the most important discoveries ever made in psychology, as it explains, not only the operation of our own minds through the correlation of faculties, but the correlations of different minds which determine the laws of social intercourse.

It is not possible, therefore, to determine the intellectual capacities of any individual by looking at his frontal development alone, as has been heretofore supposed by phrenologists. And, indeed, any close observer must have seen many examples of superior intellectual power with a forehead by no means remarkable or even apparently below mediocrity; and, on the other hand, persons with very conspicuous foreheads who were not at all remarkable for intellectual power.

Let us first look at the classification of the frontal organs of intellect, and then at their occipital correlations, upon which they depend for their energy of manifestation.

The intellectual organs may be divided horizontally into — 1, those of the brow at the base of the front lobe; 2, those of the middle of the forehead; and 3, those of its upper portion. The organs of the first group are devoted to physical perception by the

eye; but, if we extend the group back from the brow through the temples, the perceptions are also by the sense of hearing and the sense of feeling. The middle range of the forehead is that of Memory,

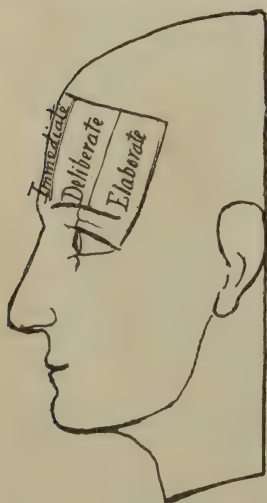


and continuing beyond the angle of the forehead we pass into a contemplative region of Meditation,—dreaming, composition, and invention,—all dependent on Memory.

The upper range of the forehead is the region of Understanding—of comprehensive views and reasoning capacity, based upon the perception and memory of the lower organs.

The intellectual region may also be divided by vertical lines into three groups. The horizontal division is based on the distinction between physical and supra-physical perception. The vertical is based on the distinction between the exterior and interior operations of the mind. The exterior relations of the mind to nature are those of immediate perception—not only of physical objects in the lower range, but of their nature and

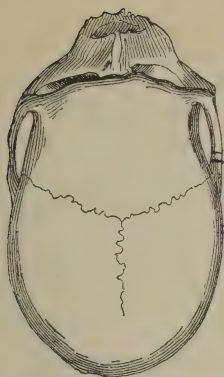
tendencies in the higher range. The interior relations of the mind, in which we reflect, combine, plan, invent, calculate, and produce the works of art and literature, belong to the external portion of the forehead, running into Ideality in the temples. The nearer an organ lies to the median line, the more external and immediate are its relations to nature; and when we pass from the median line to the internal aspect of the front lobe, we find the region of Intuition, which appears to be in the instantaneous possession of knowledge upon any subject that can be grasped. This faculty so thoroughly penetrates the nature of things as to perceive their potentialities,



and the results of their properties and powers in the future. This internal region, therefore, relates to the actual, now and hereafter; while the external region of the forehead relates to the possible—the conceptions in the human mind which may become actualities by an effort, and the combination of multiform causes in nature, by which certain results may be produced.

The organs of the median line naturally precede the exterior organs, as belonging to a lower stage of development. Animal brains project at the median line of the forehead—man only having a broad front lobe. This breadth, which gives the creative power, is characteristic of the more civilized races, and Sir William Lawrence, in a work published early in this century, illustrated the difference of the Caucasian, Mongolian and

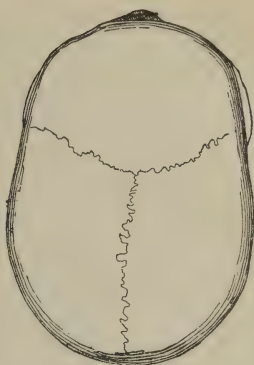
African varieties by a superior view of three characteristic skulls,



AFRICAN



MONGOL



CAUCASIAN

in which the Caucasian front lobe covers the bones of the face more completely than the Mongolian and African.

The same contrast may be observed when we compare in like manner the front lobe of the ingenious beaver with that of the common fowl, which is almost destitute of contrivance.



BEAVER



FOWL.

With these views of the divisions in the intellectual group, we may designate the three horizontal strata as the organs of Perception, Recollection and Understanding.

The vertical groups may be described as Immediate, Deliberate and Elaborate. The median group is thus perceptive, and the mental action becomes more deliberate, meditative, ingenious, systematic, constructive and profound, as we recede from the median line.

In the old Phrenology, the lower organs were considered perceptive and the upper reflective, which is not an exact statement, as the upper organs at the median line have quick perception (running into intuition), and take on the reflective, reasoning and meditative character as they approach the temples. The organs that give breadth to the forehead give a capacity for combination of ideas (which is a reflective process) in Order, System, Calculation, Invention, Composition, Ideality, Ingenuity and Scheming. The lower range along the brow may be called perceptive, as it relates chiefly to visual perceptions, but its perceptions become more complex externally and assume the character of Order, Calculation and Tune. Thus the lateral or exterior portion of the lower organs originates, not the simple perceptions of hasty observation, but the more complex ideas which require a more attentive consideration of the object.

Let us next consider the organs from within outward and from below upward. At the root of the nose, running in upon the median surfaces of the front lobes, we find the intuitive group of faculties manifested in psychometric perception or knowledge of character, and clairvoyance. This, a region of very spiritual intelligence, which

brightens and sustains all the perceptive faculties and mingling with the common phenomena of daily life gives a brightness, quickness and penetration to our perceptions, which is marvellous indeed. Hence come the quick appreciation of character at sight and the marvellous skill displayed in some cases by swordsmen, marksmen and walkers of the tight rope. All sudden, delicate and extreme powers of perception are sustained by this spiritual region. Its pathognomic line points outward and brings us into relation with all things around us. In this interior region lie the higher or intuitive intellectual powers of animals, which often display a knowledge of localities far superior to that of man. The dog, the cat, and the pig will find their way home when a man, under the same bewildering conditions, would be entirely lost. If there is anything in clairvoyance corresponding to common vision, it must be by means of the ultra violet or actinic ray, which has a sympathetic relation with the organs of the median line. The clairvoyant and psychometric faculties are more delicately and perfectly shown when they supersede those of common perception and act in connection with the co-operative organs of the somnolent and meditative region. The entranced subject usually displays a clairvoyant and psychometric power above his ordinary capacity.

Adjacent to this clear-seeing region at the inner angle of the eye is the organ of SHADE, which adapts the eye to perception in conditions of dim illumination or darkness, as clairvoyance is entirely independent of light, and for the exercise of the intuitive faculties it is best to darken the apartment, or to shut out the light by closing the eyes. The nocturnal vision of animals is due to this organ, and persons who are deficient in it have difficulty in travelling at night, or reading in a dim light. The faculty of Shade produces Nyctalopia, or night vision — the light of day being unsuited to it.

Adjacent to the organ of Shade, and vertically over the pupil of the eye, underneath the brow, lies the organ of LIGHT, which might be considered the essential organ of vision. This directs the mind to the bright, as the organ of Shade directs it to the dark, features of all objects; and by the two, Light and Shade, all objects are represented to the mind. The white paper and black ink may make a perfect picture of everything visible, except colors. Forms and magnitudes are determined by the arrangement of lights and shades; hence the organs perceptive of form and magnitude are adjacent to those of Light and Shade, from which their perceptions are derived. Light without Shade, produces Hemeralopia, or day vision alone. Immediately above the organ of Light the function is modified into a perception of color or quality of light.

The organ of FORM, at the inner end of the brow, conceives all ideas of forms and objects of every kind. It was originally recognized by Dr. Gall as a sense, or memory of persons — *Personen-sinn*; and as this part of the brain at the median line is lower in position than the other organs of the brow, which lie upon the arch of the eye socket, he believed that its development tended to force the eyes further apart, and to depress the inner angle of the eye, giving the

eyelids an oblique position. He admitted, however, that he had found the memory of persons very strong, when the eyes were neither far apart nor obliquely situated, which is the common form of the Chinese. The eyes of Germans are said to be so much wider than those of Americans as to require a different and wider arrangement of glasses for vision which is not, so far as I know, accompanied by any superior memory of persons or faculty of form. My own opinion is, that the width between the eyes depends, not upon the brain, but upon the breadth of the ethnoid bones, which lie exactly between the eyes, and that the oblique position of the eyelids is irrelevant. The organs of physical perception, lying on the supra-orbital plate of the eye socket, tend to grow directly downward, and thus depress the brow upon the eyes, their smaller development leaving a greater space between the brow and the eye. In accurate observers and good workmen I think we find the brow near the eye. The growth of the brain at the root of the nose would be more likely to affect the form of the brow than that of the eyelids. This growth is conspicuous in the head of Psyche, and the Greek form of head generally, and is an expression of the intuitive region.

The memory of persons recognized by Gall belongs to the internal portion of the organ of Form, being associated with the sense of character in the face perceived by the psychometric faculty. The sense of forms or objects generally, whether small or large, belongs to the blending of this organ with Size and Distance. Form and Distance make the geographical faculty, or knowledge of places and their bearings.

From the minute perceptions of the organ of SIZE we rise, in going up, to the grander perceptions of the organ of DISTANCE, which has heretofore been called Locality, or knowledge of places, a title which is not incorrect. While this organ gives a capacity for knowing and recollecting places, it does not produce the passion for travelling which it guides, which is due to the restless locomotive impulses of the occipital base of the brain, which are not content in a quiet, settled life. The lower occiput gives an impulsive, inquisitive spirit, and the central base of the brain a turbulent restlessness. These make the traveller and hunter, while the breadth at Tranquillity, and the prominence of the organs of Understanding, give a more sedentary disposition.

Between the organs of Size and Distance, and those of Light and Color, comes the organ of WEIGHT, which gives a conception of external forces, the weight, momentum, strength and solidity of all objects, — conceptions which are intimately associated with that of magnitude, but essentially different. The faculty is essential in architecture and mechanism, to insure stability and firmness of construction. It gives an exterior perception of forces, while the organ of the SENSE OF FORCE, at the exterior angle of the brow, gives the conception of interior forces, exerted in our muscular system, and consequently produces dexterity in all we do, whether as to the stability of the body, or the dexterous use of the hands, without which one cannot attain much manual skill in any art. This is an

illustration of the general truth, that organs near the median line have a more exterior, and those at the side of the head more interior, operation.

The organ of the sense of Light, immediately above the middle of the eye, runs into that of COLOR, which appears in the brow. Its name expresses its function, the recognition of colors. Its deficiency produces the color-blindness which so often disqualifies railroad operatives, that they cannot distinguish the colors of signals. Some cannot even distinguish the contrasted colors, red and green. Many can recognize only two or three colors. The deficiency is much more common in males than in females. A small portion of the organ of Color at one side gives a more delicate perception of vital conditions. Passing upward, the sense of color changes into one of undulatory or vibratory action, passing into a conception of moments or of time, as measured by such undulations and ultimately into a conception of greater and unlimited time, reaching grandly into the past.

Next exterior to Color comes the organ of ORDER, which recognizes symmetry, equality and exactness or arrangement, objecting to confusion and disorder. It seeks mechanical and artistic perfection, and is tributary to Calculation, Invention and Ideality. It occupies the exterior end of the brow, at the origin of the external orbital process, and immediately behind this process comes the organ of CALCULATION or NUMBER which perceives numbers and their relations. The marvellous powers of this faculty in such as Zerah Colburn and George Bidder look almost like intuition. Colburn, when six years old, could answer promptly such questions as how many seconds in eleven years, or what is the square of any number of six figures; but the faculty declined as he attained manhood.

The organs of Shade, Light and Force are at the base of the perceptive group, adjacent to the eye, around which lie Form, Size, Distance, Weight, Color, Order, Number, TUNE, HEARING and LANGUAGE. The sense of Hearing, though not marked on my bust, is located at the junction of Tune and Language, to which it is tributary. The faculty of Tune gives the talent for music, in which it is aided by the faculty of Time, which gives rhythm, and the faculty of Sense of Force, which gives delicate execution.

The faculty of Language is marked behind the external angle of the eye, a position which corresponds to the posterior inferior convolution of the front lobe and the adjacent portion of the anterior extremity of the middle lobe. This is the location in which pathological anatomy has demonstrated the seat of the faculty of Language, as its disease interferes with the faculty of speech and writing and the memory of words. The general consent of the medical profession has been given to this truth, but medical authors have generally neglected to give due credit for the original discovery to Dr. Gall, who ascertained the fact among his first observations. Gall mentioned the prominence of the eyes as the chief indication of the development of the organ, thus locating it a little farther inward than I have marked it; but he also observed that breadth behind the eyes was an indication of the development. His observations were

correct, for the interior location has a function of intellectual character so analogous to Language that its inclusion was not deceptive.

From the organs of Language and Hearing, extending backward along the upper margin of the cheek bone, we locate the organ of SENSIBILITY, which is the seat of general feeling and touch.

The existence of cerebral seats of the external senses was overlooked by Gall and Spurzheim, yet is as certain as that of any other function. This defect early attracted my attention, and I endeavored to overcome it by the observations of craniotomy. In the first three years of my cranial studies, from 1835 to 1838, I thoroughly satisfied myself that the visual faculty was in the brow above the eye, the auditory faculty in the temples behind the brow, and the sense of feeling in the temples extending back from the sense of hearing. I have had no occasion since to change my conclusions from craniotomy, but have found them fully confirmed by experiments on the brain and by psychometric exploration.

The sense of Feeling may be considered an external as well as internal sense, since it gives us information of many objects, and in that portion of it which I have called Impressibility, it receives impressions from medicines, and from the vital forces of human beings or animals, which give a vast amount of knowledge, and constitute an important part of psychometry.

The investigation of the organ of the sense of Feeling requires delicate psychometric capacities, and in 1842 I made a very thorough investigation of the brain by means of a very delicate and acute psychometer, whose perceptions have been verified ever since. Behind the organ of Hearing, which recognizes atmospheric vibrations, we find the more delicate senses which recognize the imponderable elements (supposed to be also vibratory). Galvanism, magnetism, static electricity and caloric are perceived by fibres grouped together in semi-circular arrangement, in the midst of which is the optic sensibility which tends to make the eyes delicate, irritable and intolerant of light. This portion of the temples in producing photophobia is accompanied by a great increase of general sensibility and impressibility. The sensitive and inflamed eyes, when first affected, may be promptly relieved by dispersive passes over this region, or sponging it with warm water.

The most anterior portion of the sense of Feeling, below the sense of Hearing and the posterior part of Language, is occupied by the senses of Smell, Taste and Touch, at the upper margin of the cheek-bone — the latter being the most posterior behind the organ of Language, and the former the most anterior, below it. Between the senses of Taste, Touch and Temperature, lies the Hygrometric sense of moisture. The Electric, Thermal and Hygrometric faculties make us keenly sensitive to the conditions of the atmosphere. In morbidly sensitive conditions we are powerfully affected by variations of the temperature, moisture and electric conditions, so that we even anticipate changes of the weather. The hydrophobic sensitiveness to liquids is probably an exaltation of the hygrometric sense.

The most posterior portion of the sensitive tract is the seat of the

Respiratory sense, which recognizes the necessity of air and produces the most intense excitement when its claims are denied, as the region of Sensibility runs into that of Excitability. Inferiorly we find the sense of Fatigue at the lowest portion of Sensibility, at and below the cheek bone running into Disease, which may be regarded as an extreme form of sensibility tending to prostration and suffering, when unwholesome influences are present.

On the other hand, the highest form of Sensibility, located in the highest portion of the organ, behind the faculty of Tune, is the sensibility to the nervaura or emanations of the nervous system. This may be called IMPRESSIBILITY, as it enables us to be affected by another's presence or contact, and to feel all his mental and vital conditions. It is, therefore, a basis for the psychometric faculty as applied to persons or medicines, co-operating with the intuitional faculties of the interior of the front lobe, which perceive without any link of connection with the object. Impressibility passes upward into a dreamy somnolent region, the source of the phenomena of hypnotism and a great variety of psychic phenomena.

The faculty of Sensibility, when unduly predominant, produces a feeble, sensitive and rather timid character, easily deranged in health; but when duly controlled by the regions of Heroism and Health, it produces only the degree of sensibility necessary to warn and guide us in the preservation of health, and is a most important hygienic faculty to those who study and regard its admonitions as to food, clothing, exposure and habits.

The upper portion of the Sensitive region, adjacent to Modesty, produces a feeling of general sensitiveness to all mental impressions, and its upper posterior portion is concerned in all feelings of ardent voluptuous pleasure, while disturbing and painful impressions affect the posterior inferior portion of the organ. Thus there is a great variety of sensibilities in different portions of this organ, which need not be reckoned as distinct senses, since they are in one group, and have their common instrument in the sensitive nerves. A minute exploration might show other divisions than these, and relations to different parts of the body.

This review completes the survey of the perceptive region, which brings us into relation with all things around us, subjects us to their influence, and becomes the inlet of all influences and impressions by which human development is achieved, except those which come direct from the over-soul of the universe to the interior of the brain. By the exercise of these faculties, man continually increases the materials of knowledge; but without the higher intellectual faculties he fails to perceive relations and laws, to understand what he knows and increase his wisdom for the conduct of life. Mankind being on the animal plane, have a vast amount of knowledge or learning with a very small amount of wisdom. The age of wisdom has not yet arrived.

GULLIBILITY.—The gullibility mentioned in this number of the JOURNAL received a new illustration in the Boston Theatre, Sunday evening, June 24. A very large audience assembled to witness a contest between Kellar and a *professed medium*, named Bridge, not knowing that Bridge was himself but a mechanical trickster instead of a medium. Public intelligence on such subjects is of too low a grade to distinguish between mediums and impostors. The basest impostors can attract large audiences by flaming hand-bills. As a matter of course Bridge's trick machinery was exposed by Kellar, and it is probable the show was gotten up by collusion between them.

The Sanitarium or Health Palace of Dr. Flower, on Columbus Avenue, Boston, is undergoing such extensive changes in the building under the able superintendence of PROF. HUMISTON that it cannot probably be ready for use before September or October. The new arrangements, in the way of ventilation, baths and novel medical appliances, will present a model, which is to be hoped may stimulate imitation in other public institutions. We may anticipate in this institution practical illustrations of the value of SARCOGNOMY in the art and science of healing.

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